

A SHORT HISTORY OF AMATEUR RADIO

by

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SUMMARY

Amateur radio has grown up with the science of radio. Its history, due to the changes made during World War I, can be divided into two parts, the pre-war period and the post-war period. During the pre-war period, enthusiasts first appeared with the news of Marconi's first transmissions. In 1912, the government regulated amateur radio and issued a booklet containing the names of all American amateurs. In 1914, the American Radio Relay League was founded, and, in the following year, the first issue of its official publication, QST, appeared. In 1917, the war shut down amateur operation, and, of 6,000 "hams" in the country, over 4,000 went into the services. After the war, the principle activities dealt with long distance communication, much success being found on wave lengths below 200 meters. In 1923, the first amateur Transatlantic conversation was achieved. In 1927, amateur short wave bands were considerably cut by the International Radio Conference in Washington. "Ham" is derived from an English corruption of the word "amateur". Due to the war, all amateurs are off the air at present.

A HISTORY OF AMATEUR RADIO

BACKGROUND

Amateur radio has grown up with the science of radio itself. It is a hobby more closely bound with engineering than any other, and its ranks are dotted with devotees from all walks of life from the skilled technician to the grade school boy anxiously searching the band for an answer to his first CQ. Marconi, pioneer in radio investigation, liked to call himself the first amateur. Many other distinguished men followed him as "hams", and these men did much to build radio to its present important position. It is proposed in the following pages to give a short history of amateur radio and to show some of the things amateurs have accomplished.

The difference between amateur radio before and after World War I is the difference between the inefficient crashing spark gap and the quiet effectiveness of the three element vacuum tube. Radio before and after the war was considerably different because the war stimulated development, and improvements were made in many respects. Vacuum tubes were coming into extensive use and radio had, as a whole, made much progress. It is for this reason that the history to follow will be divided into two parts, Pre-War and Post-War Amateur Radio.

PRE-WAR AMATEUR RADIO

About the year 1900, Marconi began to show the feasibility of wireless communication, and his work was widely publicized. This publicity created much interest in persons all over this country, who read eagerly of the strange new invention. The idea of communication without wires or other visible medium held a fascination which has always been the motive impelling those who would become "hams". When Marconi

sent his first "S" across the Atlantic, there were several amateur receiving stations set up in attempts to receive him. These were quite unknown to each other, and it might really be considered that amateur radio was born then. According to Maxim, none of them succeeded in picking up the signal, but this did not discourage them. As a matter of fact, the failure spurred these early amateurs to even greater efforts.

REGULATION

Up to the year 1912, there was no legal regulation of amateur radio, but by that time it had become evident that it was necessary to prevent interference by amateur radio with the marine and commercial services. These latter were already established and increasing rapidly in importance. Consequently, an international congress was called which resulted in the Wireless Law of 1912, limiting amateur operation. Station and operator's licenses were required, and a call book listing all amateurs was issued. Amateur operation was prohibited on all wave lengths higher than 200 meters, anything lower being considered worthless. Perhaps the most valuable result of the law at that time was the call book, because it revealed the true magnitude of the hobby by publishing the names and addresses of all American "hams". To the orderly mind of Hiram Percy Maxim, this list immediately gave the idea of organization into a unit, which resulted in the founding of the American Radio Relay League in 1914. In 1915, the League's official organ, QST (The Q code signal for "Attention, all stations") came into being, and it is still published every month. With the organization of the League, various systems of relay stations were spread across the country until, in 1916, three East-West and three North-South trunk lines existed. In 1917, a transcontinental message was

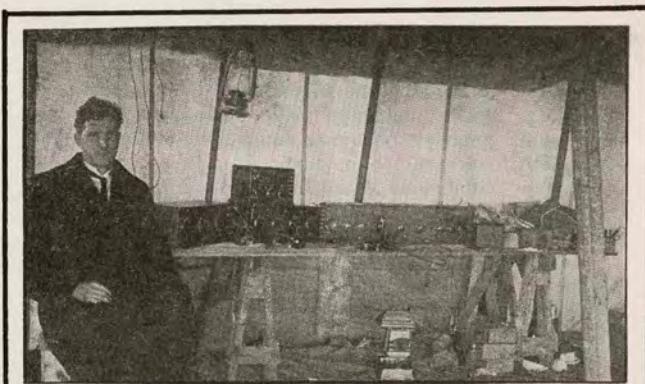
sent from Hartford to Los Angeles and back in one hour and twenty minutes. The route was from Hartford to Albany, to Jefferson City, to Denver, to Los Angeles, and, at that time eighty minutes was a record.

WAR-TIME AMATEUR RADIO

The first World War brought an abrupt halt to all amateur transmission and other activities. Over 4,000 "hams" enlisted in the armed forces, and 75 percent of the pre-war amateurs were sent to France. There, radio at first played a very secondary role to wire communication, but gradually it increased in importance. After the Armistice, an American net connecting Chaumont, Treves, Luxemburg, Spa, and Coblenz, handled a large part of the administrative business of the time. American forces in France used French radio equipment because it had been field tested and was better adapted to military use.

POST-WAR AMATEUR RADIO

After the war, the government was not enthusiastic about amateur radio, and it was almost a year after the Armistice before the ban on amateur transmission was lifted. With the war, the vacuum tube had come into considerable use and proved to be much more efficient than the old rotary spark gaps. With more efficient equipment, concepts of long distance



Godley's tent receiving post at Ardrossen, Scotland, where he heard the first American signals.

operation changed rapidly from 1,000 to 1,500 to 2,000 miles, so that, by 1920, serious consideration was being given to transatlantic contacts. As yet, by 1921, no European had heard an American amateur signal. It was suspected that this was because of European operators' unfamiliarity with 200 meter equipment. For that reason an American amateur was sent to England and there heard 30 American stations. In 1922, another test was carried out and 315 American signals were logged, and, moreover, one French and two British stations were heard here. No transatlantic contacts had been made up to this time and they did not appear likely at 200 meters. Consequently, the lower wavelengths were investigated by various amateurs with remarkable results, and in 1921, the Navy enlisted amateur aid to study the higher frequencies. As the wavelength dropped, distance results grew constantly better. In 1923, contact was established for several hours between a Frenchman, Deloy, and two Americans. Since that time transatlantic communication has been quite common. Wavelength of 110 meters was used by Deloy, and investigations were carried on all around 100 meters at the time. In 1924, a 9,000-mile contact was made between Connecticut and New Zealand. As a result of this increased work below 200 meters, it became evident that the bands below that wavelength were far from worthless. With the increasing interest of commercial companies, it became necessary to partition the available frequencies into bands. American Radio Relay League officials obtained bands at 80, 40, 20, 10, and even 5 meters, although little had been done with them prior to this time. These bands were soon tested and excellent distance results obtained. Up to 1926, eight amateurs had contacted all continents; at the present time about 5,000 have done so.

In 1927 at the International Radiotelegraph Conference in Washington, amateur radio became a semi-permanent institution when the Conference recognized it as an accepted form of radio communication. The frequency bands assigned by the Conference were narrower than those previously held but the deficiency has been made up to some degree by the improvement in equipment, such as the introduction of crystal control, single signal receivers, etc. After this date, development has consisted for the most part of technical improvement and expansion of activities already begun. Some of these activities before this War included: Army and Navy amateur nets, emergency work in times of disaster, cooperation with expeditions (200 have been assisted), and experimental development.

"HAM"

The term "ham" should be explained. It was originated by 19th century English sportswriters, whose abbreviation for amateur was "Am". Cockney dialect changed it to "ham" and in some way it reached American landlines where it referred to newcomers and cubs. It eventually got around to amateur radio telegraph operators, who have accepted it with considerable pride.

Today the amateur bands are temporarily silent. Amateurs assist Civilian Defense, experiment along various lines, and try curious methods of communicating with their fellows (Ex. - Through the gas and water pipes, supersonics, etc.). Every "ham" looks eagerly forward to the end of the War when his and 60,000 other transmitters can go back on the air.

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